

COMMUNICATION RESOURCE PACK



**DISCOVER
THE PAST**

**EXPLORE
THE PRESENT**

**ENRICH
THE FUTURE**



MOTAT

MUSEUM OF TRANSPORT AND TECHNOLOGY

Great North Rd and Meola Rd | Western Springs | Auckland

0800 MOTATNZ (0800 668 286) | www.motat.org.nz

Bookings: (09) 815 5808 | Email: bookings@motat.org.nz

PROGRAMME OVERVIEW

What is it?

This programme is designed to give students an opportunity to explore communication tools from the past and present. Students will discuss what communication is and how developments in communication have changed our lives. The artefact based workshop explores developments in communication over time. Students will be challenged to consider how these developments have changed the way we live our fast paced lives today. Artefact tables will enable students to have hands-on interaction with items from the MOTAT collection such as telephones, records, cameras, morse code key, Braille and much more. Written, Visual and Aural communication will all be explored.

Our self-led trail will utilise the MOTAT collection to explore communication technology in the past; from the development of camera and film, telegraph and telephones to the signal box and traffic light.

Summary

This resource offers ideas to help teachers and students develop a programme of study which relates to the possible learning experiences on the MOTAT visit. Once a booking is made, class teachers and museum educators will negotiate the learning goals of each visit to cater for the learning needs of specific class groups.

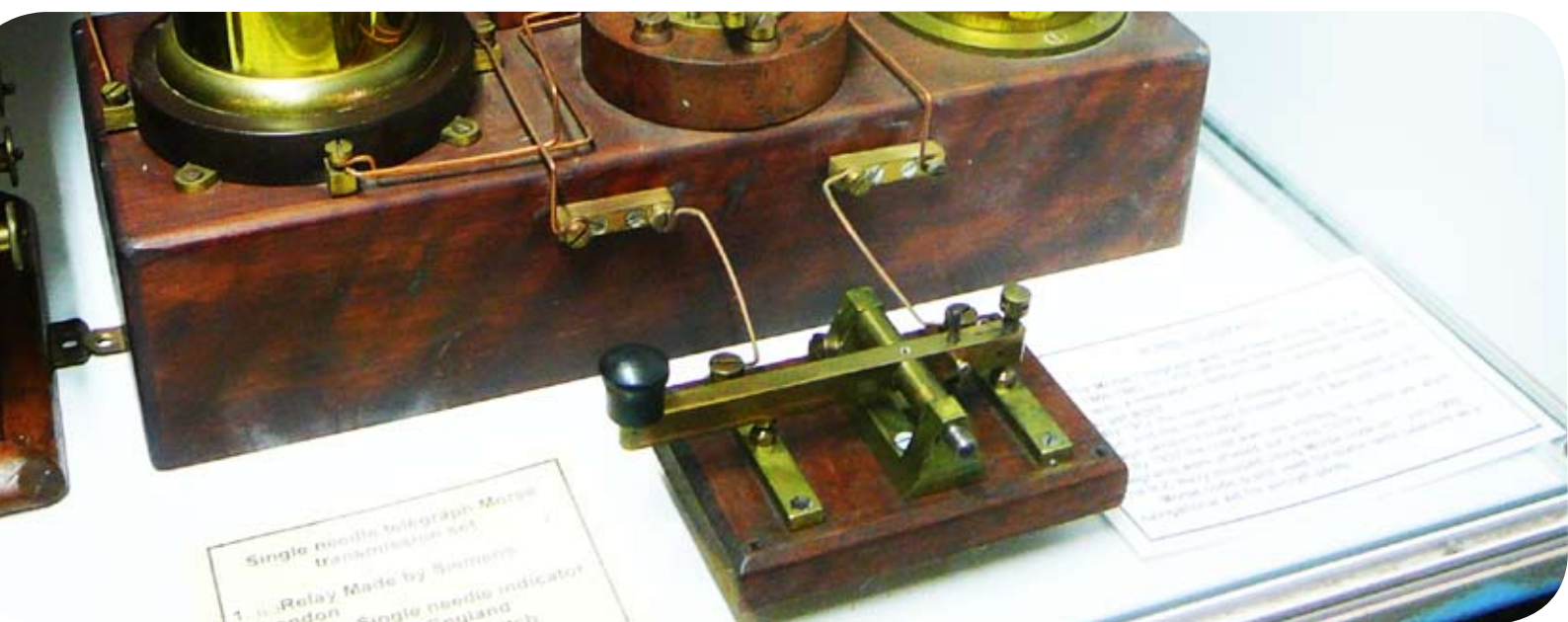
During your visit students will take part in several activities including:

- An educator led workshop session which explores communication tools from past and present. Self guided trail around MOTAT using programme related trail cards

Your visit may also include

- Tram ride
- Tactile Dome
- Voyager 1 ride
- Challenge Zone – Hands On area
- All of these activities are subject to availability and relevance to your learning goals.

Embedded in these learning experiences are the Key Competencies and Values. Successful learners will make use of the competencies and explore their own values and those of others in combination with the pre and post visit learning experiences offered in their own classroom and via the MOTAT experience.



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CURRICULUM LINKS

Achievement Objectives and Learning Goals

Achievement aims for **Communications** have been drawn from the Social sciences and Technology curriculum areas. Depending on the learning experiences of class groups the following aims may be reached.

Learning goals for each class group will be negotiated with the class teacher before the visit. Suggested are possible learning goals for your group.

Level	Achievement Objective	Students will gain knowledge, skills and experience to:
1	Technology/Hangarau	<p>TECHNOLOGICAL KNOWLEDGE <i>Characteristics of technology</i> Understand that technology is purposeful intervention through design.</p> <p>NATURE OF TECHNOLOGY <i>Characteristics of technological outcomes</i> Understand that technological outcomes are products or systems developed by people and have a functional nature.</p>
	Learning Goals	<ul style="list-style-type: none"> • Students are able to give an example and use of current communications and telecommunications technology. • Students are able to illustrate how a chosen piece of telecommunications technology affects their lives (e.g. telephone, mobile phone, text messaging). • Students are able to give examples of changes that have affected family and community life, i.e. ways of communicating.



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Level	Achievement Objective	Students will gain knowledge, skills and experience to:
2	Social Sciences/ Tikanga-a-iwi	<p>SOCIAL STUDIES Understand how people make choices to meet their needs and wants.</p> <p>Understand how time and change affect people's lives.</p>
	Technology/Hangarau	<p>NATURE OF TECHNOLOGY <i>Characteristics of technology</i> Understand that technology both reflects and changes society and the environment and increases people's capability.</p>
	Learning Goals	<ul style="list-style-type: none"> Students are able to give examples of the use and operation of telecommunications technology in everyday life. Students are able to give examples of methods of communication as applied to daily life 'then and now'. Students are able to identify how the invention of the telephone has changed aspects of the lives of communities (e.g. emergency services, keeping in touch with others, sharing news).

Level	Achievement Objective	Students will gain knowledge, skills and experience to:
3	Technology/Hangarau	<p>NATURE OF TECHNOLOGY <i>Characteristics of technology</i> Understand how society and environments impact on and are influenced by technology in historical and contemporary contexts and that technological knowledge is validated by successful function.</p>
	Learning Goals	<ul style="list-style-type: none"> Students are able to describe in simple words, how an example of telecommunications technology works (e.g. computer, telephone, mobile phones, etc.). Students are able to give examples of some positive and negative effects of telephones/mobile phones, or other telecommunications technologies, on people's lives and the environment. Students are able to give an example of ways in which invention and development of telecommunications have changed people's lives.

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CURRICULUM LINKS

Level	Achievement Objective	Students will gain knowledge, skills and experience to:
4	Social Sciences/ Tikanga-a-iwi	SOCIAL STUDIES Understand how innovation creates opportunities and challenges for people.
	Technology/Hangarau	NATURE OF TECHNOLOGY <i>Characteristics of technology</i> Understand how technological development expands human possibilities.
	Learning Goals	<ul style="list-style-type: none"> Students are able to explain the use and operation of a range of telecommunications technologies in everyday use (e.g. fax machine, email, walkie-talkie, text messaging, etc). Students are able to critically examine the impacts of telecommunication equipment and systems on the local and wider environments, and society. Students are able to identify some effects of the mobile phone on their, and their parents'/whānau lives.



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Key Competencies

Students who participate in LEOTC programmes at MOTAT will be developing key competencies.

T	hinking	Through their learning experiences at MOTAT students will be encouraged to question and reflect, both in group and one on one situations. The self guided trail is designed to challenge students to consider and problem solve as they observe the artefacts.
R	elating to others	Through their learning experiences at MOTAT students will be encouraged to. They will have the opportunity to work together in cooperative group activities.
U	nderstanding language, symbols and texts	Through their learning experiences at MOTAT students will be encouraged to gather information by reading and interpreting object labels and symbols on or beside artefacts or on the trail cards.
M	anaging self	Through their learning experiences at MOTAT students will be encouraged to meet personal goals and manage their learning.
P	articipating and contributing	Through their learning experiences at MOTAT students will be encouraged to develop understandings about the role a museum has within the community. As they develop respect for the museum artefacts and the past they represent, students contribute to the preservation of their community heritage. Through their learning experiences at MOTAT students will be encouraged to develop understandings about the role a museum has within a community of learners, and the role learners play in contributing to the preservation of this community's heritage.

Values

All MOTAT LEOTC programmes integrate values identified by The New Zealand Curriculum (MoE, 2007). Our programmes encourage students to persevere in the face of difficulties; think critically, creatively, and reflectively; respect diversity; be fair, honest, responsible, accountable and act ethically; to respect others, themselves, and the treasures/taonga displayed here at MOTAT.



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LEARNING EXPERIENCES

Pre-visit Activities/Discussion Points

Listed below are some ideas for possible learning experiences related to the programme to assist with planning. Select appropriate activities that fit with the learning needs and learning styles of your students. Some Teacher Templates are included for your convenience.

Pre-visit Activities

Undertake some preliminary investigation into the development and role of communications and telecommunications technology.

1. Brainstorming:

- What is communication?
- How do people communicate/share messages?
- What about people who can't talk, see or hear? How do they communicate? How could we communicate with them?
- How does communication help us?
- What different pieces of equipment do we use to communicate with?
- What does telecommunication mean?
- How did people communicate in the past? List them.

2. Provide pictures of different methods of telecommunication, e.g., smoke signals, drums, flags, letters, lights, etc.

- Make a 'then and now' poster of telecommunications.

3. Students can 'tell' each other about an object, or about what they've done before coming to school, without using words. Explore many different ways of doing this, e.g. drawings, gestures, music, song and dance.

Post-visit Activities

The following are suggested to build on the experience at MOTAT

Students choose one of the following and discuss what they would need, if that was their only way of communicating with friends to invite them to a party. Choose from the following:

- Smoke signals
- Pūtātara- conch shell trumpet
- Typewriter
- Telegraph
- Mobile phones
- Internet

OR Students offer suggestions for improvement of their chosen object of telecommunications technology.

OR Students predict some possible roles of telecommunications in the future. What would the students like telecommunications to be able to do for them (e.g. 'tell' the vacuum cleaner to clean their room before they come home)?

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Concept mind map — use these ideas to help get your planning underway. Fill in the gaps on this sheet or start on the blank sheet provided.

Type and Uses of Inventions

Rotary Phone: Communication with people.

Cell Phone: Mobile communication

Internet: Communication with the world, more information than ever.

Social Issues

Too much information

Too much advertising

Censorship?

What ways are New Zealanders effected

NZ was very isolated, communications keep Kiwi's informed.

EFFECTS OF COMMUNICATION INVENTIONS IN NEW ZEALAND

MOTAT VISIT

- Look at communication inventions
- Explored how they were invented

Key Inventors of Communications

Morse Code:
Samuel Morse

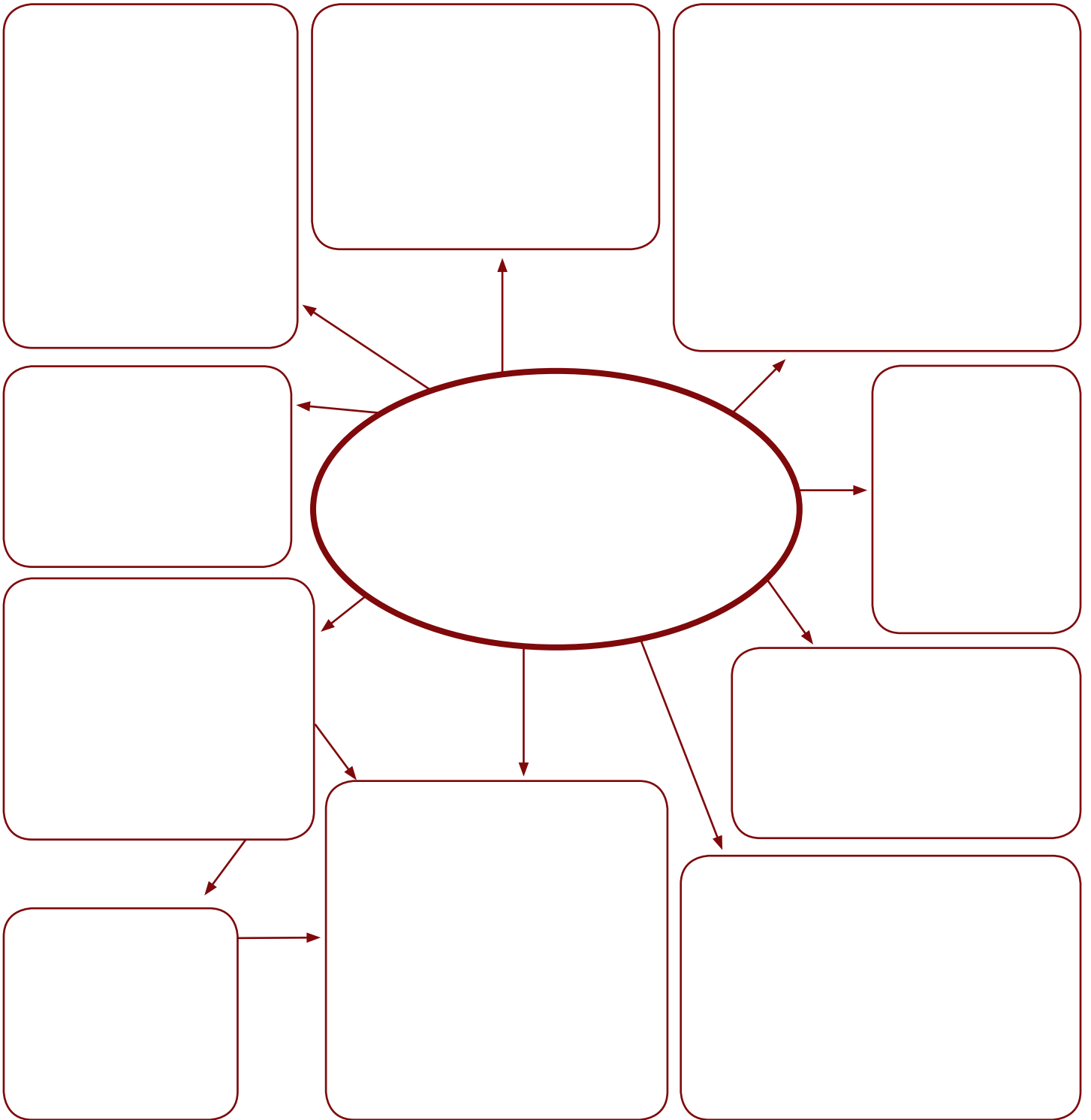
Telephone:
Alexander Graham Bell

Cell Phones
Ericsson of Sweden

Negative Impacts

Power consumption
Difficult to dispose of
Cyber Bullying

Mind map



TEACHER TEMPLATES

Communication

Complete the first two columns before the MOTAT visit.

Use the second two columns after the visit to assess learning and plan future directions.

PLEASE RETURN A SAMPLE OF COMPLETED CHARTS TO MOTAT TO HELP US IMPROVE OUR PROGRAMMING.

What I **KNOW**

What I **WANT**
to find out about

What I have
LEARNED

What I would like to
learn **MORE** about

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TEACHER TEMPLATES

Use this template to help organise your students' thinking.

You may like to give your students a question / statement to consider.
Eg, 'if items we use every day had never been invented'.

PLUS

MINUS

INTERESTING

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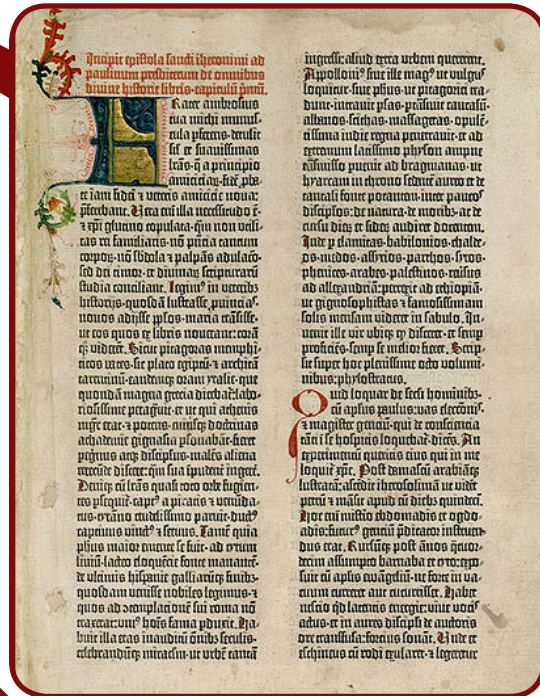
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SUPPORTING MATERIAL

Communications Timeline

- 280 BC Lighthouse (Alexandria)
- 50 BC Paper (China)
- 1311 Navigation chart
- 1450 Letter press
- 1609 Newspaper Germany
- 1794 Semaphore telegraph
- 1837 Electric telegraph and Morse code
- 1839 Photography
- 1843 Christmas card
- 1874 Typewriter
- 1876 Telephone
- 1877 Sound recording
- 1887 Gramophone
- 1894 Film
- 1906 Sound radio
- 1907 Colour photograph

A sketch of what the Lighthouse of Alexandria of ancient Egypt may have looked like (courtesy of Wikipedia Commons)



The first page of the first letter press printed book, 'The Bible'. This is known as the Gutenberg Bible, after it's printer Johannes Gutenberg (image courtesy of Wikipedia Commons)



'Tartan ribbon' is the first known color photograph, taken by James Clerk Maxwell in 1861. (image courtesy of Wikipedia Commons).



Alexander Graham Bell speaking into a prototype model of the telephone (image courtesy of Wikipedia Commons).

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SUPPORTING MATERIAL

Inventions timeline cont'd

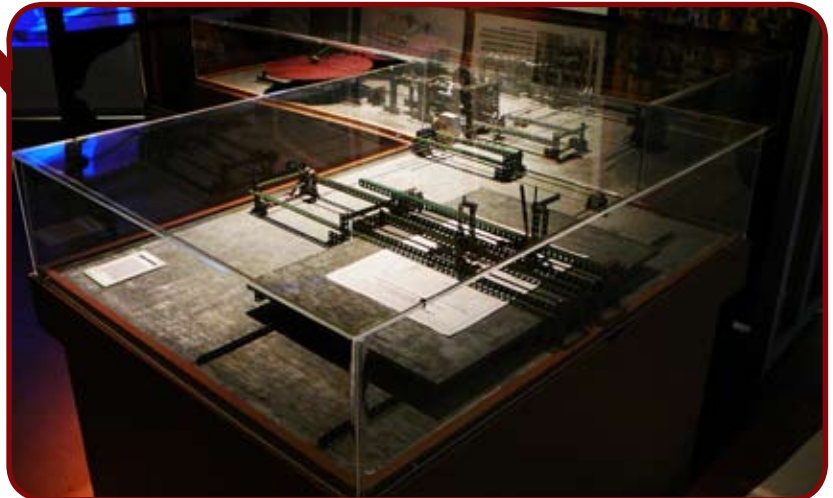
In 1902, Georges Claude was the first to apply electricity to a sealed tube of neon gas to create a coloured lamp. Different gasses create different colours (image courtesy of Wikipedia Commons).



A 1928 television invented by John Logie Baird (image courtesy of Wikipedia Commons). The world's first working televisions and television transmissions were built in the early 20th Century, and perfected by Baird in the 1920's.



(below) MOTAT's differential analyser is an early mechanical rather than electronic computer from 1944



Apple iPod family from left to right: iPod Shuffle, iPod Nano, iPod Classic, iPod Touch. (artwork courtesy of Matthieu Riegler, Wikipedia Commons)

- 1910 Neon sign
- 1920 Public broadcasting by radio
- 1926 Film soundtrack
- 1932 Full colour movie
- 1936 Television
- 1938 Ballpoint pen
- 1945 Electronic Computer
- 1948 LP Long playing record
- 1953 Colour Television
- 1954 Transistor radio
- 1956 Video Recorder
- 1960 Communications satellite
- 1962 Satellite television
- 1977 PC Personal Computer
- 1979 Mobile phone
- 1979 Walkman
- 1982 CD Compact Disc
- 1983 Internet
- 1988 Digital camera
- 1990 www World Wide Web
- 1997 Google.com
- 2001 iPod
- 2003 Blu-ray discs
- 2004 Web 2.0
- 2006 Twitter
- 2006 Digital television

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SUPPORTING MATERIAL

Communication in New Zealand

Communications in early New Zealand were sent by messenger, either on foot, boat, waka or horse. The rugged countryside and lack of roads meant that sending these messages was very difficult.

Postal

1840 The first postal service was at Kororareka (Russell), New Zealand's first capital.

1876 Mail now took only 45 days to get to the U.K.

1893 The introduction of reliable steamships shortens the delivery time for mail to the U.K to 33 days.

1940 An airmail service to Australia and beyond was established.

Telegraph and Telephone

1866 The first telegraph cable was laid across Cook Strait thereby linking the North and South Islands.

1876 A trans Tasman cable is opened linking New Zealand with the rest of the world. Messages could now reach Europe with days.

1881 The first manual telephone exchange established in Christchurch.

1965 Satellite dishes located at Warkworth near Auckland join New Zealand to the global satellite communications network.

Radio

1922 Private radio stations commence across the country.

1966 Radio Hauraki broadcasts as a pirate radio station becoming the first private commercial station.

2004 New Zealand had over 200 radio stations. One of the largest numbers per capita in the world.

Television

1959 AKTV broadcasts from Shortland Street in Auckland.

1962 TV was broadcasting in all main centres.

1973 Colour TV begins.

1975 TV2 begins transmission.

1989 TV 3 begins transmission.

1990 SKY TV begins transmission.

1997 TV 4 begins transmission which later becomes C4 in 2003

1998 PRIME TV begins transmission. SKY Digital begins transmission.

2004 Maori TV begins transmission.

Weblinks and other resources

These websites are sources of more information. MOTAT does not endorse these sites but includes them as possible research starting points. Teachers should check websites themselves before referring them to their students.

MOTAT	www.motat.org.nz
Encyclopedia of New Zealand	www.teara.govt.nz
New Zealand History Online	www.nzhistory.net.nz
How Stuff Works	www.howstuffworks.com
Wikipedia	www.wikipedia.org/wiki/History_of_communication
History of Communication	www.inventors.about.com/library/inventors/bl_history_of_communication.htm

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